

General Notes

- All dimensions are in metres unless otherwise stated.
- All levels are in metres.
- This drawing is to be read in conjunction with all relevant Engineers and Architect's drawings, Specifications, Reports and Engineering Details.
- Do not scale from this drawing.

Section 104 notes

- All adoptable drainage works shall be in accordance with Design & Construction Guidance and Anglian Water's guidance notes.
- All adoptable manhole covers shall comply with BS EN 124 in accordance with Design & Construction Guidance.
- Lateral manholes with a depth of less than 1.2m from cover to soffit shall have a chamber with a minimum internal diameter of 450mm.
- Lateral manholes with a depth of more than 1.2m from cover to soffit shall have a chamber with a minimum internal diameter of 450mm, with a restricted access opening of 550mm for safety reasons.
- All pipework with less than 1.2m cover in highway or less than 0.9m cover in soft shall have a concrete protective cover slab to adopting water company requirements.
- Flow routes need to facilitate the potential route of flood flow in rainfall events exceeding the storm sewer design criteria, as required by the Design & Construction Guidance. Flow routes shall be kept clear of permanent physical obstructions which may obstruct the flow of surface water and cause flooding.
- Screen/grill to be located in last manhole to prevent any debris/rubble from entering the existing network during construction.
- All uncovered and shallow pipework to be protected against construction traffic as part of the contractors temporary works.
- Manholes with outgoing pipes greater than 600mm diameter shall be fitted with guard bars, safety chains or other approved safety device.
- A Section 136 application and approval is required with Water Company for all connections (including indirectly) to the existing public sewer network prior to any connection being made.
- Any amendments to the section 136 agreement after section 104 technical approval compliance is issued, may incur a charge from Anglian Water. Refer to table 22 of Anglian Water's Developer Changing Arrangement 2022-2023 for details of any fees.
- The exact position, level, size and use of existing sewers to be confirmed on site and reported to the Engineer prior to the commencement of works.
- All pipes are to be laid with level soffits or as indicated.
- Trapped road gullies to be used for all gullies designed in shared parking areas.
- No inffit covers and frames to be used in block paved areas.
- Protective concrete cover slabs to be used on pipes in non traffic area which doesn't achieve 0.9m cover level and 1.2 cover in traffic area.
- Where pipe crossing, plastic membrane to be used for protection to eliminate any chance of cross contamination.
- Precast concrete manhole rings will not be out under any circumstances. Other options will instead be utilised such as building up with concrete or brickwork to the top of the pipe.
- Covers and frames should be kitemarked.
- Pipes of different diameters entering the same manhole should be installed with soffits at the same level.
- All pipes located within the carriageway are located at least 1m from the kerb. The manholes are located 0.5m from the kerb.
- All manholes covers to be 675x675mm cover and frame to maintain clear 600x600mm access in accordance with BS EN 124 Class D400 and embossed FW or SW as appropriate. All proposed manhole covers must comply with Anglian Water Ltd current Health & Safety Standards.
- All manhole construction is to be in accordance with the Design and Construction Guidance.
- Non degradable marker tape is to be laid 300mm above the size of the rising main.

Health, safety & the environment

In accordance with the Construction (Design and Management) Regulations 2015, the design and details on this drawing have been the subject of a Designers Risk Assessment, to identify risks in the construction, use, or demolition of the scheme.

It is not considered necessary for Designers to highlight obvious and/or common risks (such as deep excavations, manual handling and working around heavy plant) which Contractors should be familiar with, and be able to control by good management and site practice.

So far as is reasonably practicable, the risks inherent in the design have been eliminated. Where it has been considered that elimination of a risk (or part of a risk) is not reasonably practicable, it has been reduced.

This drawing has been based/developed using the following external drawings					
Type	Company	Drawing date	Drawing title	Date received	Rev
Site Layout	JGA Architects	04.05.2022	20050 0102 P06 Proposed Site Layout-Model Space	04.01.2023	P06
Topographical survey	EMP Surveys LTD	July 2022	1021_Pinchbeck Topographical Survey_Final	04.01.2023	P05

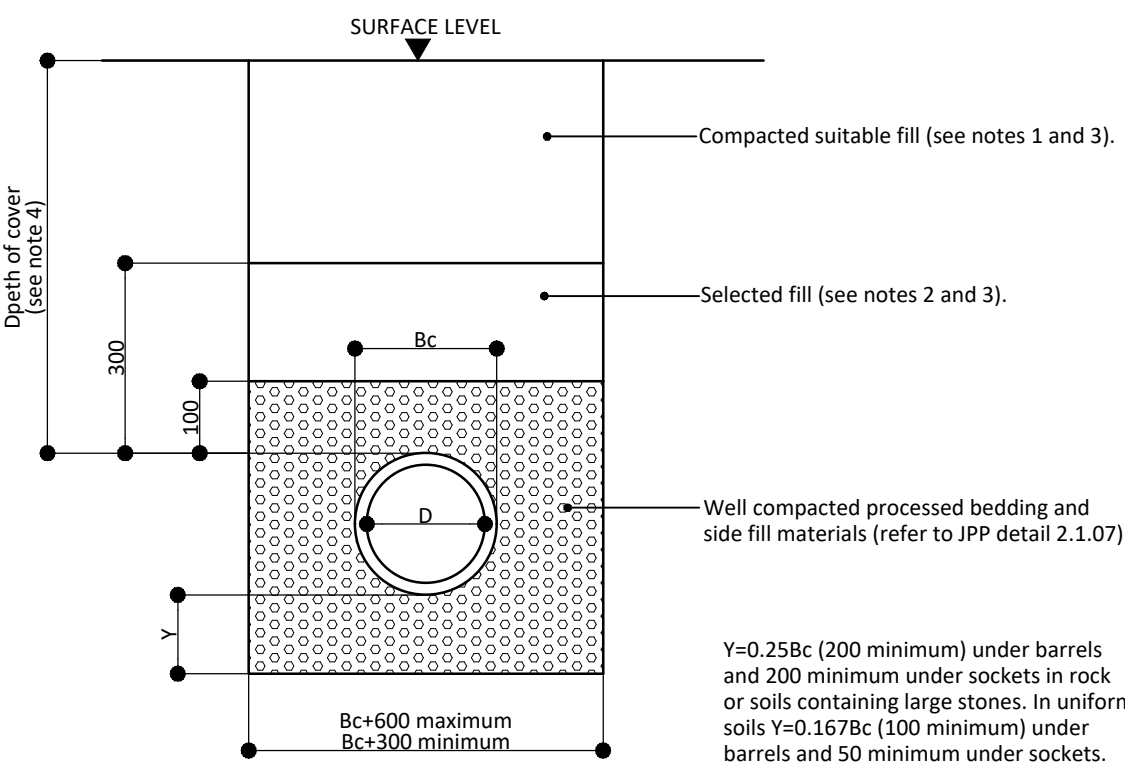
Agreement	Approval Granted
S23 (Land drainage consent)	NOT APPROVED
S104 (Adoption of sewers)	NOT APPROVED
S278 (Works in existing highway)	NOT APPROVED
S106 (Foul connection)	NOT APPROVED

ALL WORKS WITHIN THE ADOPTABLE PUBLIC HIGHWAY SHALL CONFORM TO THE CURRENT "LINCOLNSHIRE DEVELOPMENT ROADS & SUSTAINABLE DRAINAGE DESIGN GUIDE" AND "DEVELOPMENT ROAD AND SUSTAINABLE DRAINAGE SPECIFICATION AND CONSTRUCTION" PUBLICATIONS IN FORCE IN THE COUNTY AT THE TIME OF CONSTRUCTION.

ALL ADOPTABLE DRAINAGE WORKS TO BE IN ACCORDANCE WITH CODES FOR ADOPTION DESIGN & CONSTRUCTION GUIDANCE

DRAWINGS HAVE NOT BEEN APPROVED, UNTIL THE DRAWINGS ARE APPROVED THE DESIGNS AND DETAILS SHOWN ON THIS DRAWING ARE SUBJECT TO CHANGE.

ANY WORKS UNDERTAKEN PRIOR TO TECHNICAL APPROVAL IS ENTIRELY AT THE CONTRACTORS' RISK.



Notes and specification

- Suitable fills shall be capable of accepting compaction plant subject to the Engineer's approval and shall exclude boulders, lumps of concrete, bricks, timber and vegetable matter.
- Selected fill shall be readily compatible material free from roots, organic material, building material, and shall be in an uniform condition. Selected fill shall exclude clay lumps exceeding 25mm size. Selected fill shall be carefully compacted around and above the pipe, taking care not to damage the pipe.
- Where the pipe is installed in areas which are paved or future settlement of back fills is not acceptable then back filling of the trench shall be carried out using type 1 sub-base to Highways Agency specification for Highway Works compacted to the same specifications.
- Minimum cover:
 - Cover shall be greater than:
 - 200mm in areas subject to heavy construction plant.
 - 100mm in areas subject to normal construction traffic.
 - 120mm to finished level of new main road pavements.
 - 600mm in landscape areas, foot ways, gardens or fields

Flexible carrier drain - class s bedding, surround and backfill

Notes and specification

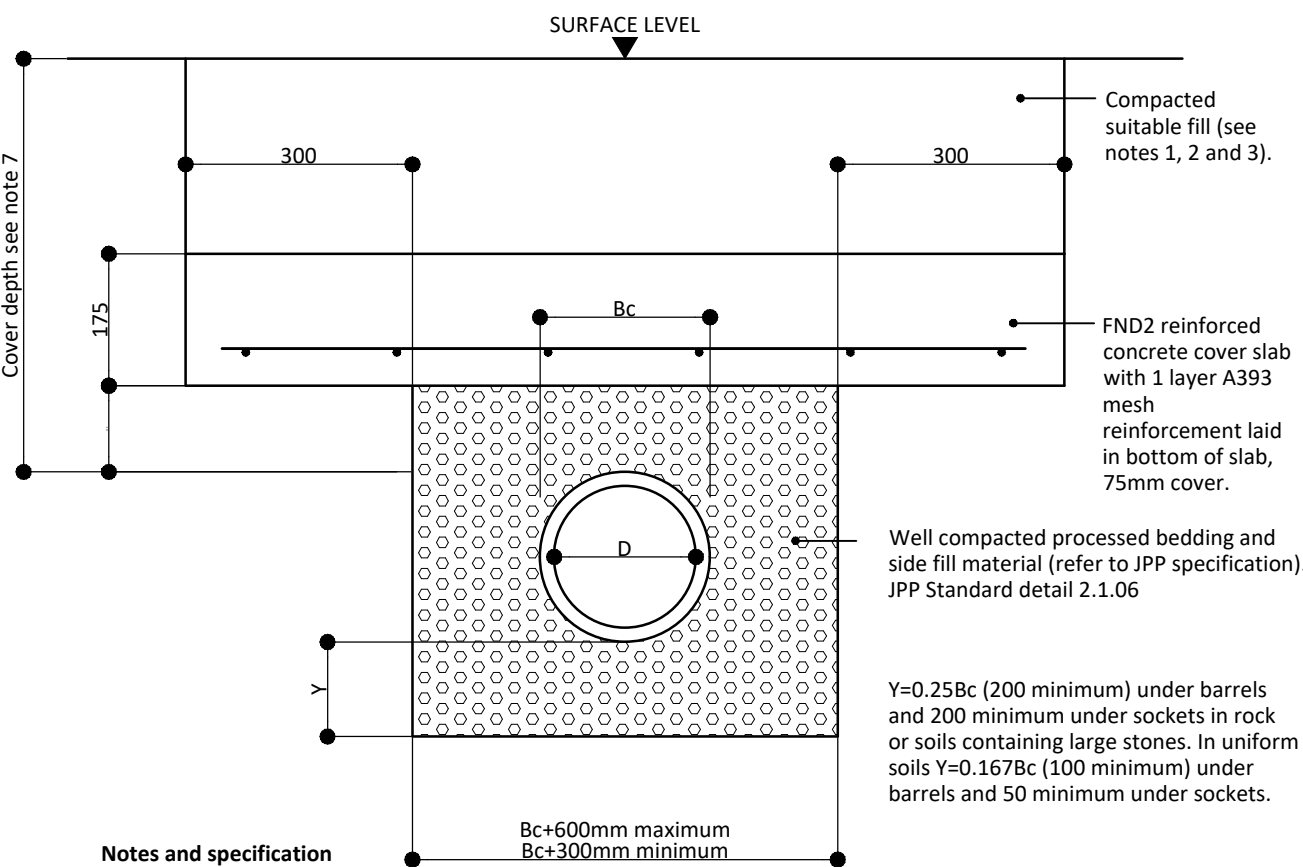
- Processed granular bedding and side fill materials shall include aggregates to BS EN 12620 + A1 and lightweight aggregates to BS EN 13055-1 and shall be graded as defined in the following tables:

Table 1

Pipe Nominal Size (mm)	Maximum Particle Size (mm)	Class of Bedding	Maximum CF Value	Material
100	10	S	0.15 0.30	10mm nominal single size
over 100 to 150	15	S	0.15 0.30	10 or 14mm nominal single size or 14 to 5mm graded.
over 150 to 300	20	S	0.15 0.30	10, 14 or 20mm nominal single size or 14 to 5mm graded or 20mm to 5mm graded.
over 300 to 550	20	S	0.15 0.30	14 or 20mm nominal single size or 14 to 5mm graded or 20mm to 5mm graded.
over 550	40	S	0.15 0.30	14, 20 or 40mm nominal single sized crushed rock or 14 to 5mm graded or 20mm to 5mm graded or 40 to 5mm graded.

- The sulphate content of bedding and side fill materials shall not be greater than 0.3% as sulphur trioxide. The above specification has been produced based on the Water Industry specification publication
- No. 4-08-01 (issue 4) February 1994.
- Compaction factor (CF) shall be determined in accordance with water industry publication No 4-08-02 (issue 1) February 1994 - appendix B.

Specification for bedding and sidefill materials for flexible pipes (class s bedding)



Notes and specification

- Suitable fills shall be capable of accepting compaction plant subject to the Engineer's approval and shall exclude boulders, lumps of concrete, bricks, timber and vegetable matter.
- Where the pipe is installed in areas which are paved or future settlement of back fills is not acceptable then back filling of the trench shall be carried out using type 1 sub-base to Highways Agency specification for Highway Works compacted to the same specifications.
- Back filling and compaction of suitable fills shall not be carried out until the concrete slab has obtained sufficient strength to accommodate back filling operations.
- Rigid pipes shall be:
 - (i) Clay pipes with min FN of 40 to BS EN 295 and BS65
 - (ii) Concrete pipes to BS 5911 and BS EN 1916Concrete pipes shall not be used for foul sewers unless otherwise stated.
- Construction, subsequent testing, operation and maintenance shall be carried out in accordance with BS EN 752. Sewers to be adopted by water companies shall be installed in accordance with the current edition of 'Sewers for Adoption' produced by the Water Services Association. Sewers to be adopted by highway authorities shall be installed in accordance with the authority's specification.
- Movement joints shall be formed at intervals not exceeding 6.0m centers and comprise 20mm thick compressible filler board placed between slabs.
- Cover to pipes shall be:
 - (i) 900mm or less in landscape areas, foot ways, gardens or fields
 - (ii) 1200mm or less to finished level of main road pavements.
- Workmanship shall be in accordance with BS 8000 - 14:1989

Rigid carrier drain class s bedding sidefill and backfill with bridging slab

Notes and Specification

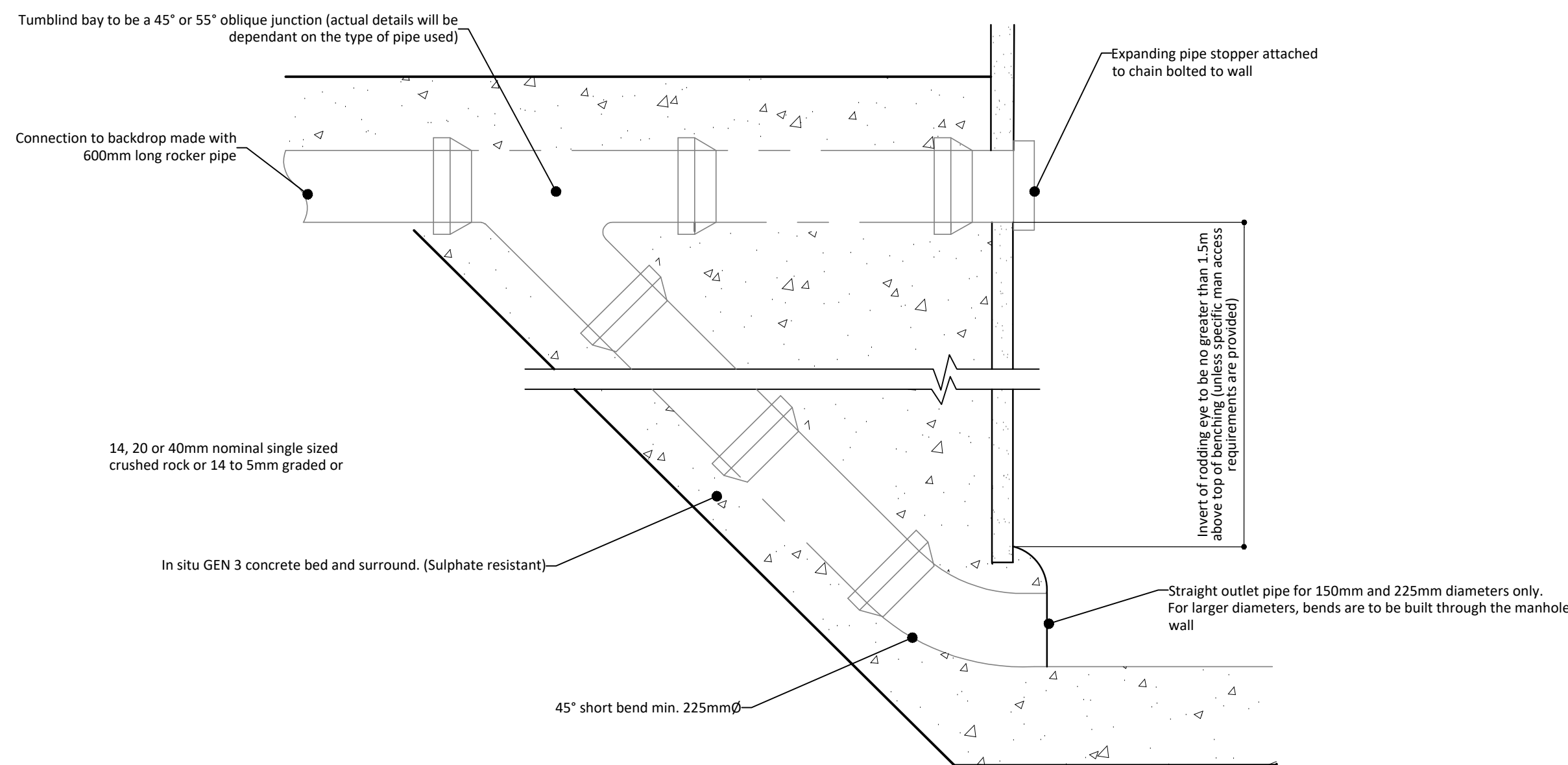
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Specification for bedding and sidefill materials for rigid pipes (Class S & B bedding)



External Ramped Backdrop

- Infrastructure Design
- Structural Engineering
- Development Planning
- Geotechnical & Environmental
- Surveying
- Professional Advice

Drawn By:	AD	Client:	Burnor Construction
Chkd By:	LC	Project:	Land East of Surfleet Road Pinchbeck
Scale @ A0:	NTS	Title:	Adoptable Drainage Construction Details (Sheet 2)
Date:	February 2023	Status:	FOR TECHNICAL APPROVAL
Project No.:	26043	Drawing No:	103 (2)
Rev:	-		



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